

Is Orthodontic Treatment Fearful?

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ABSTRACT

Background: Objective: To evaluate the anxiety level of prospective orthodontic patients. **Methods:** Dental Anxiety Scale-Revised (DAS-R) questionnaire was modified and filled by 101 subjects (53 females and 48 males) visiting for their orthodontic treatment. **Results:** 62.4 % patients had no or low anxiety levels and 9.9% and 5.9% showed high to severe anxiety levels respectively. There was no statistical significant difference seen between the anxiety levels in male and female patients. **Conclusions:** 37.6 % patients for orthodontic treatment showed moderate to severe anxiety levels with no significant difference seen in the overall anxiety levels between the genders.

Keywords: dental anxiety, dental anxiety scale.

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INTRODUCTION

Dental anxiety, a state of unpleasantness with associated fear of danger from within or a learned process of one's own environment is a common hindrance in the dental treatment. The anxiety associated with the dental situation is a concern for the orthodontist as it leads to avoidance of orthodontic treatment. Approximately 6 to 15% people worldwide suffer from high dental fear.^[1] Dental anxiety has multifactorial origin with the major causes being illiteracy, lack of dental awareness, irregular dental attendance, maternal anxiety and socioeconomic status. A traumatic past dental experience and attitude of dentist were found to be fear provoking factors in dental anxiety.^[2,3] The onset of dental anxiety occurs in childhood, peaks in early adulthood and declines with age.^[2] Dental anxiety of childhood and adolescence may persist leading to development of disruptive behavior.⁴ Dental anxiety causes frequent and serious problems for the dentist as well as the patients leading to harmful effects like avoidance and cancellations of dental appointments as well as unacceptable behavior during the procedure like crying, anger.^[3]

Anxiety in a child develops with the existence of

anxious people around them. Dental behavior of children is under the influence of the patient's attitude and patients with high level of anxiety exert a negative influence on their children. While discussing the role of family's influence on children, Lechner,^[5] considered maternal anxiety as the primary factor influencing child behavior.^[6] The literature is replete with articles discussing the influence of maternal anxiety on children but only few studies have been conducted on father's anxiety. Corah's Dental Anxiety Scale (DAS) is one of the most widely used and studied instrument for measuring dental anxiety. The modified scale has high levels of reliability and validity. The scale yields a score of 4 to 20, with scores greater than 15 are indicative of phobic levels of anxiety.^[1,7-9] The purpose of the present study was to evaluate the anxiety level of patients scheduled for orthodontic treatment.

MATERIALS & METHODS

A prospective study was conducted at Patna Dental Clinic, Ashok Raj Path, Patna, Bihar and, Gums and Braces Multispeciality Dental Clinic, Rajgarh Road, Solan, H.P. during January 2015 to December 2017. A total of 101 subjects including 58 female and 48 male visiting orthodontist, willing to participate in the study were selected. The samples were asked to complete the questionnaire in the waiting area. Questionnaire: Questionnaire used was modified from of Dental Anxiety Scale-Revised (DAS-R). The questionnaire consisted of 5 close ended questions relating to various dental situations and

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each question had 5 options. After the informed consent was obtained the patients completed the questionnaire in the dental operatory. Confidentiality was maintained. Statistical analysis was carried out using SPSS version 10.

Scoring:

a=1, b=2, c=3, d=4, e=5

Total possible score = 20

Anxiety rating:

Anxiety level	Score
No or Low Anxiety	<9
Moderate Anxiety	9-12
High Anxiety	13-14
Severe Anxiety/Phobia	15-20

RESULTS

In the present study anxiety levels of 101 patients aged 11 to 25 years were analyzed. Among the subjects 44.6% were between 11 to 19 years and 55.4 % were 20 years and more [Table 1].

Table 1: Distribution Of Subjects According To Age And Gender

Age Group	Female	Male	Total	Mean
11-19	33	12	45 (44.6%)	21.7
20-25	25	31	56 (55.4%)	
Total	58	43	101	

The present study showed that 62.4% patients had no or low anxiety level with only 9.9% and 5.9% showing high to severe anxiety respectively. 21.8% patients showed moderate anxiety levels [Figure 1].

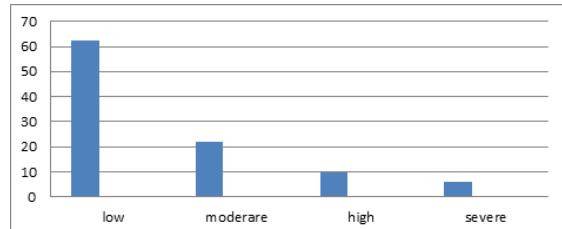


Figure 1: Distribution Of Stress Level in Total Subjects

Among the studied sample, 26.7 % males and 35.6 % females showed low anxiety level and equal percentage of males and females showed severe anxiety levels (2.9%). 8.9% females showed high anxiety while only 0.9% males were highly anxious. The finding was not statistically significant (p-value 0.941) [Figure 2].

Table 3: Distribution of Subjects Based on the Questionare

Questions	Percentage
Q.1: If you had to go to the orthodontist tomorrow for a check-up, how would you feel about it ?	
a) I would look forward to it as a reasonably enjoyable experience.	72 (71.3%)
b) I wouldn't care one way or the other.	6 (5.9%)
c) I would be a little uneasy about it.	7 (6.9%)
d) I would be afraid that it would be unpleasant and painful.	5 (5.0%)

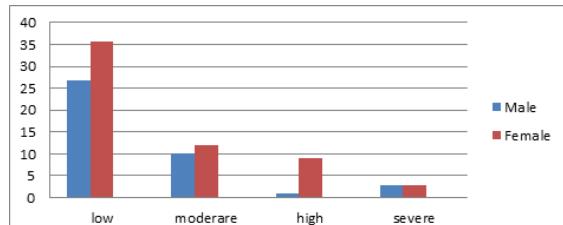


Figure 2: Distribution Of Stress Level in Male and Female Subjects

There was no statistical significant difference between the two age groups patients; 29.7 % of sample less than 20 years and 32.7% sample more than equal to 20 years showed moderate to severe anxiety (p-value - 0.425) [Table 2].

Table 2: Distribution Of Anxiety Level According To Age Group

Age	No/ Low Anxiety	Moderate To Severe Anxiety	Total	p-value
< 20 Years	15 (14.8%)	30 (29.7%)	45 (44.6%)	0.425
≥ 20 Years	23 (22.8%)	33 (32.7%)	56 (55.4%)	
Total		38 (37.6%)	63 (62.4%)	101

The present study based on Dental Anxiety Scale-Revised (DAS-R) questionnaire customized for orthodontic patients [Table 3] showed that, 71.3 % of the respondents would look forward to go to the orthodontist as an enjoyable experience and only 10.9% would be very frightened of what the orthodontist does.

According to questionare, 64.4% of the participants would feel little uneasy waiting for their turn in the chair, 21.8% would feel relaxed, while the rest would show higher anxiety levels.

While sitting on the dental chair and the orthodontist talks about extraction of teeth, 57.4% would feel a little uneasy, 16.8 % would feel relaxed, 9.9% of the participants would be anxious and so anxious that would break out into sweat.

While sitting n the dental chair and waiting for the braces to be placed, 54.5 % would feel a little anxious. 21.8 % would be relaxed while 11.9% would be anxious

e) I would be very frightened of what the dentist would do.	11 (10.9%)
Q.2: When you are waiting in the orthodontist's office for your turn in the chair, how do you feel?	
a) Relaxed	22 (21.8%)
b) A little uneasy	65 (64.4%)
c) Tense	5 (5.0%)
d) Anxious	7 (6.9%)
e) So anxious that I sometimes break out in a sweat or almost feel physically sick	2 (2.0%)
Q.3: When you are on the orthodontist's chair and the orthodontist talks about extraction of your teeth, how do you feel ?	
a) Relaxed	17 (16.8%)
b) A little uneasy	58 (57.4%)
c) Tense	6 (5.9%)
d) Anxious	10 (9.9%)
e) So anxious that I sometimes break out in a sweat or almost feel physically sick	10 (9.9%)
Q.4: Imagine you are on the orthodontist's chair to have your braces placed, and the orthodontist is getting out the instruments which will be used, how do you feel?	
a) Relaxed	22 (21.8%)
b) A little uneasy	55 (54.5%)
c) Tense	6 (5.9%)
d) Anxious	12 (11.9%)
e) So anxious that I sometimes break out in a sweat or almost feel physically sick	6 (5.9%)

DISCUSSION

The present study assessed the anxiety level of prospective orthodontic patients using Dental Anxiety Scale-Revised (DAS-R) modified for orthodontic cases. DAS scale is the most widely used measure of dental anxiety and was developed to measure psychological stress.^[7] The Corah Dental Anxiety Scale (DAS) was introduced in 1969 as a brief, valid, and reliable instrument to measure anxiety about dental visits.

The scale consists of four questions related to the orthodontic situations with the first two questions relating to anxiety generally and the latter two relating to anticipated fear of specific stimuli.^[1,7-9] Dental anxiety is seen in approximately (6-15%) of the population and is a learned process of unpleasantness to one's own environment.^[1,11] Similar finding was noted in the present study where 16.8 % of the subjects showed high to severe fear. Dental anxiety has multifactorial origin, and among the environmental factors parental dental fear is strongly correlated to that of the child.^[12] Markus et al,^[13] in a meta-analysis demonstrated a significant relationship between parental and child dental anxiety. Parental anxiety has perhaps received the most attention within the literature as an important external factor that may influence the child's anxiety and behavior within the dental setting.^[12,14,15]

In the present study 37.6% patients for orthodontic treatment showed moderate to severe anxiety levels. Mothers with high levels of dental anxiety exerting negative influence on their children have been depicted by Lechner 5 and Ripa.^[16] Folyani et al,^[17] reported significantly high level of dental anxiety among mothers as compared to fathers. Similar finding was reported in a study conducted in Israel by Benjamin and Dan⁶ that females had

higher anxiety level as compared to their males for dental treatment. Literature is replete with articles suggesting the influence of maternal anxiety in child behavior.^[2,5,6,16-18]

The influence of dental anxiety of males has been largely ignored. Although many authors have reported that dental anxiety is more common in women than in men.^[2,17] There was no statistically significant difference in the anxiety levels of males and females in the present study which is in agreement to the findings of Sari et al,^[19] and Ersin and Seniz.^[20] Parents' perception of dental appointments being unpleasant may be passed onto children. An assessment of parents fear prior to child's dental treatment may help the clinician in modifying behavior management strategies. Whenever parental anxiety is high, efforts to reduce the parents' level of anxiety may also benefit the child. Providing parents with information about their child's dental treatment has been found to be an effective intervention in reducing the pre-operative anxiety of the parents.^[14,21] Parents are generally seen accompanying their children to the Orthodontist.

Anxiety is therefore not only encountered in parents visiting Orthodontic clinic but is common in the other speciality as well. Studies have reported high anxiety levels in parents of children awaiting orthodontic treatment which could affect the outcome of their child's treatment.^[19,20] Good dental health education, regular dental visits, good patient-dentist relationship, and effective communication with patients and parents may all contribute to the control of dental anxiety. This study addressed only on orthodontic patients anxiety, the evaluation of parent's anxiety and correlation of parent's anxiety and its influence on children remains to be investigated.

CONCLUSION

It can be concluded from the present study that 37.6 % patients showed moderate to severe anxiety levels. There was no significant difference seen in the anxiety levels between the two age groups. The anxiety levels of females and males were not significantly different. The dental anxiety levels in parents may influence the anxiety levels of children. Therefore identifying anxiety levels of parents accompanying their children can help the clinician in designing the behavior management strategies for the child accordingly.

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